N.Z.V.R.S. Bulletin

NEW ZEALAND VINTAGE RADIO SOCIETY

Vol.18 No.1 May 1997

George Anchor at the Microphone in 1933

NEW ZEALAND VINTAGE RADIO SOCIETY

A non-profit organization devoted to the preservation of early radio equipment and associated historical information.

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MEETINGS; Regular Auckland of the NZVRS are held on the third Monday of each month at 7.30pm.

VENUE; Meeting room of the Dominion Road Methodist Church (at the rear of the Church) 426 Dominion Road Mt Eden.

SALES of vintage items are held quarterly in the months of March, June, September and December at that month's club meeting.

AUCKLAND MEETINGS CALENDAR AND SECRETARY'S DIARY

MAY 19th: Show and tell, Collier & Beale.
JUNE 16th: Sale.
JULY 21st: Show and tell, Australian radios.

WELLINGTON AREA MEETINGS
Monthly meeting are held, typically at the Tireti Hall, Te Pene Ave. Titahi Bay from 1pm on the **second** Sunday of every month. For further details contact Bob Hatton at 40 Rose St. Wadestown. Phone 04-4728788.

CHRISTCHURCH AREA Contact Russ McKee at 39 Halliwell Ave Christchurch for meeting details Ph.03-3525778

THE NZVRS BULLETIN is published quarterly in the months of February, May, August and November. Contributions from members are always welcome and should be sent to the Editor. Opinions expressed by writers are not necessarily those of the society

BULLETIN EDITOR
Reg Motion 2A Hazel Terrace.
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FOUNDING EDITOR
John Stokes 281C Hillsborough Rd. Mt Roskill Auckland 1004.

BACK NUMBERS OF THE NZVRS BULLETIN; Most issues are still available, though some of the earlier issues are now out of print. Price is $1 each for numbers up to volume 10 and $2 for issues from volume 10 onwards - postage extra. Cheques to be made out to NZVRS. Order from John Stokes at the above address

NZVRS LIBRARY; Members are reminded that our NZVRS library contains a good selection of books plus magazines and newsletters of several overseas societies. A list of publications is available from our librarian:Ernie Hakanson
17 Williamson Ave Grey Lynn
Auckland. Phone 09-3766059.

WAIKATO AREA MEETINGS are held regularly, contact Murray Hall 19 Tamaki St. Ngongotaha. Ph. 07-3575903. Next meeting is at Frits Willemsen's on 8th Sept. Check date and time first.

FROM THE EDITOR

It isn't often that the world of vintage radio makes International headlines but a recent announcement that Christies in London had been instructed by GEC-Marconi to sell off Marconi archive material produced ripples as far away as New Zealand. A press release by the auctioneers stated that:

> " ...the remarkable and little known archives of the Marconi Company, the pioneers of wireless communications are to be sold on 24 and 25 April. Offered as part of the Centenary celebrations of GEC-Marconi, this unique collection charts the history of radio from Marconi's arrival in England in 1896 through to the end of World War II."

A number of eminent persons around the world and many not so eminent have protested at this action to the point where the sale now seems unlikely and negotiations are taking place to find a permanent home for these archives in UK at an estimated cost of about ten million pounds - hopefully this will be part of a museum dedicated to the history of radio rather than a section of a general collection.

Which brings me to inquire what is happening to our own New Zealand radio archives.

One of the leading players on the early New Zealand scene was the Post and Telegraph Dept - later to be known as the New Zealand Post Office. Not only was this Department active in providing telecommunication but it was also responsible for regulating all use of the radio spectrum. Over the years the Department had collected articles and records from it's past which were of historic significance and in the 1970's set up a manned public display of these in Wellington. This little museum was taken over by Telecom NZ, when they acquired the telecommunication interests of the Post Office, and actively continued for a while but shut down in 1993 following a restructuring exercise. Since then nothing has been heard of the fate of the archives concerned.

In reply to a private inquiry of the Minister of Communications and Broadcasting at the time of closure it was stated that Telecom had assured the Minister that the collection would be held in secure storage and that it would not be broken up or dispersed: the long term future would be decided on once the current round of restructuring was complete.

Presumably this 1993 restructuring is now complete and a decision has been made. An inquiry from the NZVRS could be worthwhile at this stage. The least it could do would be to remind Telecom NZ of their undertaking.

The President's message, conveyed in this bulletin, gives news of the reorganisation of Society functions and should assure readers that the Society is forward-looking and in good health.

Apart from some of the city "B" stations like 1ZB of "Uncle Scrim" fame, little is known of the history of these early private stations. Perhaps persons involved still exist who could be interviewed, and/or mouldering records brought to light which could be used to reconstruct a story for the bulletin.

PRESIDENT'S MESSAGE

The NZVRS Annual General Meeting for 1997 was of unprecedented length due to the business transacted and the amount of goods sold at the sale which followed. We finished at about midnight. You have a totally new set of society officers. The society is in good health and poised to spring into the next millennium.

I, Ian Sangster have been elected as President, David Crozier is Treasurer and Grahame Lindsey is Secretary. You will likely remember me as the Bulletin Editor for four years, David is a Telecom employee living in Onehunga and Grahame ran a vintage radio shop called Early Sounds in downtown Auckland for a couple of years and now is involved in real estate.

Committee members are Ross Paton, Doug MacDonald, Clarry Schollum, Phil McGechie, Mark Thomson, John Hutchinson and Murray Hall. They are available for any necessary duties or to receive suggestions for improvements to the club.

Bryan Marsh is retiring after eleven years as Treasurer, we wish him the best and thank him for the many hours put into all the various jobs he has done. Some of the tasks Bryan has done will be re-distributed among other members of the society. Thanks too to Alf Veart and Mark Thomson for their service as President and Secretary.

The committee has been instructed to investigate the NZVRS becoming an incorporated society, and steps are being taken after discussion at a committee meeting.

NZVRS DIRECTORY

David Crozier 154 Grey Street Onehunga will accept your subscriptions and new membership applications.

Grahame Lindsey 110 Sylvan Ave Northcote Auckland will accept all correspondence on Society matters other than listed here. Grahame will sell the brown cloth-covered mains cable, cable units with moulded plugs, books and badges.

Ernie Hakanson 17 Williamson Ave Grey Lynn Auckland as NZVRS Librarian will handle all requests for circuit diagrams and book and magazine borrowing. If you are in the Auckland area call Ernie on 3766059 and he will open the Society library for you.

Reg Motion 2A Hazel Terrace Cherrywood Tauranga will gladly accept your Bulletin articles, copy, correspondence and advertisements.

Chris Hollis 13A Princes Street Cambridge will receive the Bulletins from the printer and post them. Chris will also despatch the extra Bulletins received from the printer to John Stokes.

Graeme Lea 73 Wallace Ave New Plymouth will maintain the membership data base and produce mailing labels and the membership list.

John Stokes 281C Hillsborough Road Mt.Roskill Auckland will continue to hold and distribute the back issues of the Bulletin.

SUPPLY OF CIRCUIT DIAGRAMS

Now that Bryan Marsh is no longer handling the supply of circuit diagrams the NZVRS library will take over this function. In future please contact our librarian Ernie Hakanson who is now in a position to handle all enquiries and may be contacted at the address shown below.

NOTE: When ordering circuits remember to include the model number of each receiver. Where a model number is not known, please supply full details such as the type numbers of each valve and include a sketch of the chassis layout showing the position of the valves.

The cost of photocopying is $1 per sheet for single sided copies or $1.50 for double sided. Postage is 40 cents extra for any number of copies within NZ. Please make cheques payable to the N.Z.Vintage Radio Society.

Mail orders to E.A.Hakanson
17 Williamson Ave
Grey Lynn, Auckland 2
Personal callers by appointment only. Ph 09 376 6059

Noted in Passing

In the March 1997 Antique Radio Classified, which is sent to us as an exchange magazine, a full page advertisement appears for "Rider on CD-Rom". Volumes one through twenty are on a single CD. This is a welcome development and it will be interesting to see the quality of the graphics and circuits as printed out on a laser quality printer. If this trend continues we may see circuits such as Sams, Rider TV and Rider Auto Radio on further issues.

The price is $249 U.S. from BPS Inc 164 Winter Haven Brownsville Texas 78521. Phone 210-546-6913.

Ian Sangster

John Francis Baker died on the 27th March 1997 - John joined the NZVRS in 1984 and was a regular attender at Auckland monthly meetings before he moved to Waiuku a year ago.

DOMINION OF NEW ZEALAND.

Post and Telegraph Department.

P. & T. 147/20/21.

LICENSE TO ESTABLISH AND OPERATE A PRIVATE BROADCASTING STATION.

In pursuance and exercise of the power and authority conferred upon the Minister of Telegraphs by the Post and Telegraph Act, 1908, and any amendments made thereto, and by the broadcasting regulations made thereunder, GEORGE SPENCER ANCHOR is licensed to establish and operate a private broadcasting station at 165, Victoria Street, Hamilton, in the radio district of AUCKLAND, for the period ending ~~31st March, 1932~~ 30th September 1932. The installation and operation of such broadcasting station shall be carried out in accordance with the provisions of the regulations aforementioned, and any amendments thereto; and, in addition thereto, this license is issued subject to the terms and conditions of the said regulations and of any agreement between the Minister and the licensee, and to such further conditions and restrictions as may be imposed from time to time.

for the Minister of Telegraphs.

Secretary.

SCHEDULE OF AUTHORISED BROADCASTING STATION.

1.	Name of licensee:	George Spencer Anchor.
2.	Location of station:	165 Victoria Street, Hamilton.
3.	Call signal:	1 ZH.
4.	Power:	40 watts.
5.	Operating frequency:	630 Kilocycles.
6.	Schedule of transmissions:	Monday, ~~Wednesday~~, Tuesday, ~~Thursday~~, Friday: noon to 1pm ~~12.30 to 1.30 p.m.~~ ~~Saturday: 11.30 a.m. to 12.30 p.m.~~

This license is issued on the condition that transmissions from the station do not interfere in any locality with reception by either valve or crystal receiving apparatus of the transmissions from any of the stations operated by the Radio Broadcasting Company of New Zealand, Limited, or with local reception from any of the Radio Broadcasting Company's auxiliary or relay stations.

GEORGE ANCHOR - A PIONEER BROADCASTER

REG MOTION

George Anchor was born in Dunedin in 1906. His father was a plumber and the family moved first to Invercargill where George attended primary school then to Hamilton where George received his secondary education at Hamilton Boys High. From Hamilton George went to Christchurch and started on a Degree Course in science but after two years of study the fascination of the emerging radio world attracted him and he moved back to the family home at Hamilton where he obtained a job with a firm in the electrical/radio business.

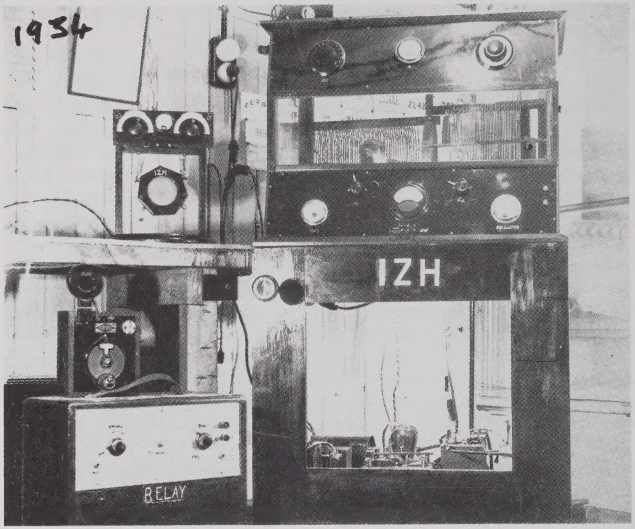
In conjunction with Mr J H Bingham, who owned one of the first stations to transmit in Hamilton, George carried out some interesting experiments in transmitting then in 1926 he qualified as an amateur radio operator and was assigned the callsign Z1FP. Two years later he was granted an experimental license for operation on a wavelength of 535 meters (560 kHz) and he began broadcasts from his own business premises, Radio House at 165 Victoria St, Hamilton, on or about 27th August 1929. For these broadcasts George modified his amateur transmitter to cover the broadcast band. This transmitter produced about 10 watts of RF output using a type 210 valve as a Hartley oscillator modulated by a type 250 .

Broadcast transmissions during this experimental period averaged about two hours a day four times a week. George was nothing if not enterprising and when a regatta was held on the Waikato river he mounted his transmitter in a speedboat and followed the scullers. Broadcasting ceased at one point when the aerial got caught in willows and the boat capsized but resumed again when the set was re-erected on the river bank.

These experimental ,broadcasts became so popular that an application was made for a "B" class license and on 19th May 1930 1ZH Hamilton came into operation with a maximum allowable power of 40 watts on a frequency of 630 kHz. The actual licence still exists and is reproduced opposite . Initially transmission was confined to one hour a day (around midday) on six days a week though this was later modified to allow an evening transmission on Tuesday.

Special transmissions were presumably arranged by agreement as a number of events were covered out of 1ZH's normal broadcasting hours. On Saturday, 5th July 1930 an Orphans Club concert was broadcast from the Waikato Winter Show Hall and on Saturday the 2nd August 1930 the rugby match, Britain v Waikato, was covered - the first of a number of rugby broadcasts. As might be expected these broadcasts were extremely popular and reports of good reception were received from as far away as Christchurch. It would be interesting to know how these outside broadcasts were arranged. Did George follow his previous practice of taking the transmitter to the site or did he use landlines?.

In September 1930 the transmitter power was increased with the introduction of a 50 watt Western Electric valve as oscillator controlled by a special modulating valve. A 2kV transformer and mercury vapour rectifiers provided the high tension for this transmitter which remained in use until July 1934 when a change was made to a Master Oscillator Power Amplifier arrangement. Coverage was good and reports were received from as far away as California.



Equipment in use at 1ZH early in 1934 - Lower right is the power supply with the transmitter above. Microphone, wavemeter and relay amplifier are on the left.

NEW ZEALAND STATIONS.
THE NEW FREQUENCIES.

Call.	Location.	K.C.	Dial Reading
1YA	Auckland	650	
2YA	Wellington	570	
3YA	Christchurch	720	
4YA	Dunedin	790	
1YX	Auckland	880	
2YC	Wellington	840	
2YB	New Plymouth	750	
1ZB	Auckland	1190	
1ZH	**Radio House, Hamilton**	770	
1ZJ	Auckland	1310	
1ZM	Manurewa	1260	
1ZS	Auckand	1420	
2ZD	Masterton	1170	
2ZF	Palmerston North	960	
2ZH	Napier	820	
2ZJ	Gisborne	980	
2ZL	Hastings	1240	
2ZM	Gisborne	1150	
2ZO	Palmerston North	1400	
2ZP	Wairoa	900	
2ZR	Nelson	1110	
2ZW	Wellington	1060	
3ZC	Christchurch	1200	
3ZE	Greymouth	1300	
3ZM	Christchurch	1450	
3ZR	Greymouth	940	
4ZB	Dunedin	1050	
4ZC	Cromwell, Otago	1280	
4ZF	Dunedin	1220	
4ZL	Dunedin	1220	
4ZM	Dunedin	1050	
4ZO	Dunedin	1050	
4ZP	Invercargill	620	
4ZR	Balclutha	1340	
4ZW	Dunedin	1470	

Hang This Close to Your Set for Reference.

With the Compliments of

G. S. ANCHOR
and CO.

1 ZH

RADIO HOUSE, HAMILTON

PHONE 2143 PRIVATE 1776

EXPERT RADIO REPAIRS BY TWO GOVERNMENT CERTIFIED RADIOTRICIANS

Agents for COURIER and BRITISH GENERAL ELEC. (G.E.C.) RADIOS, RADIOTRON and ARCTURUS VALVES.

SUPPORT THE 1 ZH CLUB

Annual Subscription 1934, 5/- now payable

PRINCIPAL AUSTRALIAN STATIONS.

Call.	Location.	K.C.	Dial Reading
5AD	Adelaide	1310	
4BK	Brisbane	1290	
2NC	Newcastle	1245	
2CH	Sydney	1210	
4BC	Brisbane	1145	
2UW	Sydney	1125	
7LA	Launceston, Tas.	1100	
2KY	Sydney	1070	
2UE	Sydney	1020	
3HA	Hamilton, Aust.	1010	
2GB	Sydney	950	
3UZ	Melbourne	930	
4RK	Rockhampton	910	
6PR	Perth	880	
2BL	Sydney	855	
3LO	Melbourne	800	
4QG	Brisbane	760	
5CL	Adelaide	730	
2FC	Sydney	665	
5CK	Crystalbrook (Ade.)	635	
3AR	Melbourne	610	
7ZL	Hobart, Tas.	580	
2CO	Corawa, N.S.W.	560	

AMERICAN STATIONS.

KSL	Salt Lake City, Utah	1130	
KMOX	St. Louis, Miss.	1090	
WOC	Davenport, Iowa	1000	
WCCO	Minneapolis, Minn.	810	
KGO	San Francisco, Cal.	790	
WBBM	Chicago, Ill.	770	
WLW	Cincinnati, Ohio	700	
KFI	Los Angeles, Cal.	640	

G S Anchor & Co.'s advertising card. (half size reproduction)

On the first of December 1933 important changes were made to the transmitting frequencies of New Zealand broadcasting stations with the object of reducing mutual interference and improving the coverage of the four main stations by operating them at the lower frequency end of the broadcast band. With this change 1ZH moved to 770 kHz

From August 1932 the hours of broadcasting were extended and an arrangement was entered into to relay the Government station, 1YA Auckland, on four nights a week. This was a logical move as the only Broadcasting Board transmission to reach Hamilton at that time came from 1YA which was poorly received - especially during the evening. 1ZH's midday service continued and was supplemented by evening request programmes once a month, studio as well as outside broadcasts of local concerts and children's programmes (1ZH Radio Chums club).

Locally generated programmes were, of course, of limited availability and the bulk of programme time was made up by broadcasts of recorded material from the 78 rpm gramophone records of the time. This produced a dilemma for "B" station proprietors as there was a demand from the Australasian Performing Rights Association for heavy copyright dues which the stations could not possibly meet. At one time 1ZH went off the air for a period on account of these demands. They obviously produced nightmares for George.

Radio reception in Hamilton relied on its only local station, and 1ZH was an important community asset. It's operation may have assisted George in local sales of receivers but there were quite heavy operational costs to be met. A 1ZH club was formed with an annual subscription of 5 shillings and this helped the position a little as did a small government subsidy. In the New Zealand political climate of the early 1930's "B" class radio stations operated on shoe string budgets with the expectation that some day the Government would allow them to use paid advertising. That day never eventuated but before the political decision was made 1ZH was closed down . A newspaper article of the day quotes George's closing statement given over the air on 10th August 1935 as follows:

> "We regret that this station will be closing down at 10am for good. Now that Hamilton listeners are able to receive 1YA and 3YA without difficulty there is no longer justification for the expense involved in running 1ZH. There are also copyright difficulties to contend with. In closing finally we wish to thank all listeners sincerely for the consideration all have shown to us and we desire to thank the New Zealand Broadcasting Board for the unfailing courtesy and fair treatment which has been extended to this station."

Afterwards George disclosed that the Government subsidy to stations operating in areas where YA reception was poor had been lost in June that year (1YA increased power to 10 kW when it moved to Henderson in January 1935). Patrick Day in his recent publication "The Radio Years" records the purchase of 1ZH by the Broadcasting Board in 1935.

George continued in the business of radio sales and servicing first at Ward St in Hamilton then later in Taupo. Eventually he retired to Mount Maunganui where he died in January this year at the ripe old age of 91. He is succeeded by his wife and family of three.

George Spencer Anchor must be acknowledged as one of the pioneers who, in spite of a severe economic depression, brought the pleasures of radio to New Zealand homes at a time when government wavered on the issue.

I acknowledge with pleasure the assistance given by George's family in passing on personal details as well as releasing the logs, photos and other records including newspaper cuttings of station 1ZH for my perusal. These cuttings are not identified but probably came from the Waikato Times consequently their use is acknowledged here as, also, are two articles from the Radio Times of 1933 which produced some valuable background material. My thanks to John Stokes for locating the latter articles.

RUSSIAN TUBES TO THE RESCUE

How AudioGlassic Teamed Up With A Russian Defense Contractor To Save The Tube Amp Market.

Written by: Brian Majeski

(As Printed in the 1994 October Issue of Music Trades Magazine.)

When the top management of General Electric decided to pull the plug on its underperforming vacuum tube division in 1984, it concluded that the operation was in an advanced state of decline and, with sales of $35 million, made an insignificant contribution to the corporation. Little did they imagine that this strategic corporate decision would cause major concern among guitarists everywhere. Among the hard-core shredmasters, a world without tubes would have been a pretty desolate place.

After shrinking steadily for several decades, vacuum tube production in the U.S. finally ground to a halt in 1985. Fortunately, however, the much feared tube shortage never materialized. Ironically, salvation for the hard rockers of the world was to be found in the Communist republics of China and the Soviet Union, the same governments that once labeled rock and roll as "degrading noise from decaying, oppressive, bourgeois societies." In the ten years since Russian and Chinese power and pre-amp tubes first appeared on the market, they have been embraced by virtually every amplifier manufacturer in the U.S. and Europe. What's more, tube aficionados claim that Russian and Chinese tube quality is exceptional.

The story of how Russian tubes rescued the tube amplifier market dates back to 1984 when Charles Gray and Farid Raffiee established R&G International in Huntsville, Alabama. Drawing on their previous career experience, the pair initially planned to concentrate on representing high-end electronics equipment to the defense and aerospace industries. However, when a Peavey Electronics engineer asked an R&G representative if he could supply some 6L6 power tubes, Raffiee and Gray sensed an opportunity. Having dealt with Russia and China in the past, the pair were well aware of the two countries' huge vacuum tube manufacturing operations. "Solid-state technology never developed in the Communist nations." explains Gray. "As a result, all their electronic devices, from military to consumer applications, are tube based."

R&G's first foray into the music industry came when it delivered a shipment of Chinese-made 6L6 power tubes to Peavey Electronics. Word of the Chinese tubes spread quickly. In

no time R&G was supplying a wide world's leading tube amp makers. Concerned about China's reliability as a source of supply, Raffie and Gray began cultivating a relationship with Svetlana Electron Devices, a huge state-run concern in St. Petersburg, Russia.

With 30,000 employees and several million square feet under one roof, Svetlana manufactured vacuum tubes for defense and communication applications, along with toys, ceramics, precision metal parts, and glassware. Initially, management showed no interest in producing audio tubes: however, by supplying designs, tooling, and marketing assistance, R&G gradually persuaded Svetlana to begin producing tubes for Western audio applications. "Getting things to move in Russia is an involved process that takes time," said Gray. "People who rush over there expecting things to fall into place with a few meetings and phone calls are bound to be disappointed."

Goods from the Warsaw Pact nations have a terrible reputation for quality. While the reputation is justified in many instances, tubes are a special case. "Once solid-state technology emerged in the West 30 years ago, tube technology was ignored," Gray explained. "So for the last 30 years, there had been absolutely no improvements in the West in tube design or manufacture. By contrast, in Russia, where tubes were all they had, there were continuous refinements and improvements. The fact is that the tube companies have a steady stream of top-rank engineering talent. As a result, today's tubes from Russia are better than anything G.E. or Sylvania ever made."

After 1989 and dissolution of the Soviet Union, parts of Svetlana Electronic Devices were put up for sale to private interests. Having developed a close relationship with the company, Raffiee and Gray jumped at the chance to solidify their relationship with the Russian firm. "Svetlana's defense production, which remains a huge part of the total enterprise, is still under government ownership, as is the ceramics division," Gray said. "However, we are part owners, along with employees and the government, of Svetlana Electronic Products." St. Petersburg-based Svetlana Electronic Products also has an equity interest in Svetlana Electronic Products U.S., the worldwide marketing arm for vacuum tubes. George Badger, a colleague of Nobel laureate Lawrence Livermore, is current president of Svetlana Electronics U.S. Aside from working with amp manufacturers everywhere, the company also supplies power grid tubes to the broadcast industry and specialized vacuum tubes for a wide range of industrial applications.

After cultivating a large O.E.M. business, five years ago R&G formed AudioGlassic to market tubes for the replacement market. The AudioGlassic division currently offers a wide range of power tubes, rectifier tubes, and preamp tubes backed by an unconditional six-month warranty. "We're so confident about our quality that we're willing to offer a no-questions-asked warranty," said Dee Campobasso, who heads the division.

With sales of tube amps advancing at a rapid clip, the replacement market for tubes has also seen a healthy jump. Sales at the AudioGlassic division are keeping the factory in St. Petersburg busy-and somewhat mystified as well. "It's hard for some of these Russian engineers to fully understand guitar players' fascination with vacuum tubes," said Gray, "but they're happy to have the business."

Peter Lankshear found the above article on the Internet and forwarded it for readers interest. It is reprinted here with acknowledgement to the original source - Ed.

The Radio Craft Company Inc

John W.Stokes

One of the first commercially built receivers seen in this country was an American made 3-valve regenerative set sold under the name Radio Craft. This name never became well known, either in the US or elsewhere, for the very good reason that these receivers were manufactured for only a very short period of less than a year, and thereby hangs a tale.

Radio Craft sets were imported into New Zealand in 1922 by a firm known as the International Electric Co (later International Radio Co. Ltd) who were agents for the De Forest Radio Telephone & Telegraph Co. Because at that time broadcasting had hardly begun, there was consequently little of entertainment value to be heard; morse signals from shipping and land stations made up the bulk of what was on the air in those early days. Amateur (ham) radio activity though small was growing, but it was hardly likely that many amateurs could have afforded to purchase such an elaborate and expensive receiver as the Radio Craft model D6, so where was the market to be found? The actual receiver depicted here is known to have been sold in New Zealand during 1922 and put to use in conjunction with a small De Forest transmitter during the same year (see article in NZVRS Bulletin, May 1996). But, quite apart from any 'heritage' interest this particular receiver may have, all Radio Craft sets are interesting because of the circumstances surrounding their origin.

The model D6 was of quite conventional design, consisting of a regenerative detector followed by two stages of AF amplification, and in this respect was no different from hundreds of other brands on the market. An examination of the D6 reveals it to be constructed entirely from De Forest parts, in fact it was to all intents and purposes a De Forest receiver. What then was the reason for not using this prestigious name? It had to do with patents, a matter which plagued the American radio industry in the early days; in this case it was the famous (or infamous) regeneration patent.

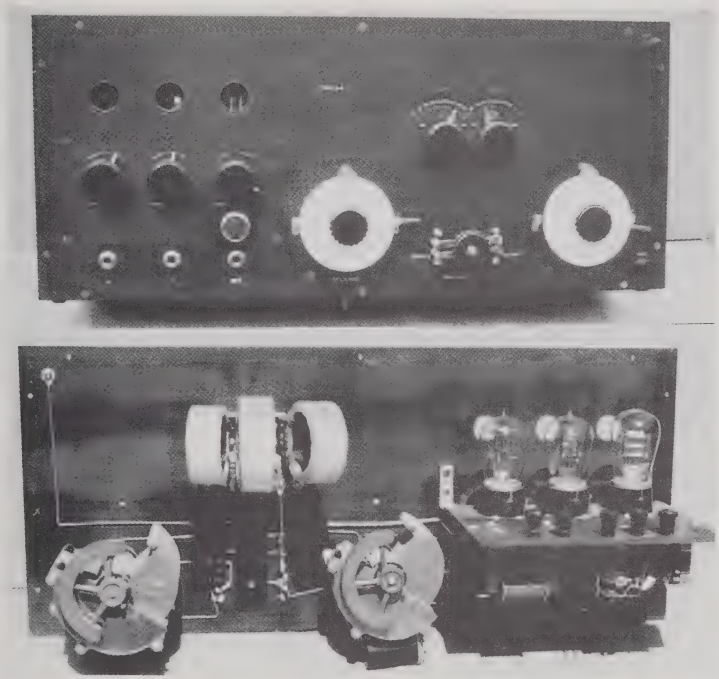
Historians will know that a long drawn out legal squabble between Armstrong and De Forest resulted in Armstrong being granted a patent on the regenerative feedback circuit, a circuit which was of considerable importance in those days. However, by 1920 Armstrong had sold the patent to Westinghouse who refused to license its use to De Forest with the result that the performance of De Forest receivers was inferior to comparable regenerative sets.

Being denied the use of regeneration, De Forest resorted to making disparaging remarks about the subject, A 'sour grapes' description of the Company's 'Radiohome' receivers reads:

"The circuit used in this set is not regenerative, the leading radio engineers being agreed that the complexity of controls necessary and the difficulty of operation, with such a circuit, are not worth the slight benefits obtained from regeneration which is valueless in the reception of radio telephone signals and seriously distorts them." (De Forest catalogue 'H',1922)

Now, as was well known at the time, the use of regeneration was a very important feature, as De Forest was well aware, but without the all important license from Westinghouse what was he to do? In an attempt to secure a patent license through the back door, an existing licensee, a firm by the name of Radio Craft Co Inc. was purchased and this action explains how the name Radio Craft came to be used by De Forest. Unfortunately, only after the marketing of receivers under the Radio Craft name was it discovered that the license was not transferable. Exit the name Radio Craft; but not until after the subterfuge of pretending that the Radio Craft Co was not owned by De Forest had been discovered by Westinghouse and legal action taken to prevent further regenerative sets being produced.

In an attempt to continue receiver production De Forest changed to the use of reflexed circuitry thus avoiding the use of regeneration; but the results were not entirely successful and no further receivers were manufactured after 1925.



Radio Craft model D6 front and rear views

SUBSTITUTE FOR ALL-METAL OCTAL VALVES

John R L Walker

I collect and restore vintage communications receivers, many of which use all-metal octal valves such as 6SK7, 6SA7, 6SQ7, etc. Recently I acquired a Hallicrafters set containing several valves labelled 6SK7/M and which looked more or less like the original 6SK7s but were labelled as made in Brazil by RCA and had black bakelite bases with black aluminium cases! Imagine my surprise when I pulled one out and the aluminium case came off to reveal a miniature 7 pin type 6BA6 wired inside the octal base.

Examination of my RCA valve data books revealed that these types were electrically very similar, so I suppose this could be considered as an example of what I call "legimate cheating" in restoration work. It seemed to me, therefore, that this could be a useful ploy to use for other single-ended octal types; all you need is the equivalent miniature valve, a base from a discarded "G-type" octal valve and a suitable aluminium tube/cover. Luckily it turns out that the rolled aluminium tubes used for some vitamin tablets (eg Becora™) are just the right fit inside the old octal base.

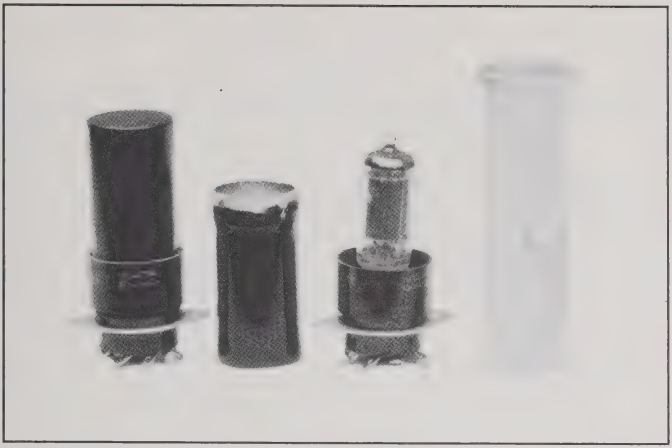
So, to create a substitute type 6XYZ/M, obtain the equivalent 7_pin valve and solder 4 -5 cm of fine wire (15A fuse wire) to each pin, taking care not to overheat and crack the glass, then cover with a short length of insulating sleeving. Next, compare the two base connection diagrams and feed the appropriate wires into the correct pins on the octal base; thus for a 6SK7 replacement; the wire from pin 5 (anode of the 6BA6) will go into pin 3 of the octal base and so on. Try to keep the grid and anode connections as short as possible, check your connections, solder and trim off excess wire. Finally cut the aluminium case to the right length, give it a coat of matt black paint, glue or wedge it into the old octal base and re-label your new creation. For example, I made a substitute 3Q5 battery output pentode from a 3S4 for a Hallicrafters S-29. *A note of caution,* the above arrangement will not give the same efficient shielding as the original metal type unless you devise some way of connecting the aluminium case to pin 1.

To assist readers I have listed the correct equivalents from the RCA valve manual. However if you are desperate you can probably find a workable substitute because most valve circuits are reasonably tolerant; you could even investigate using later B8A (EF41 etc) and B9A (EF89 etc) based types.

Valve Equivalents

Octal type	Miniature equivalent	Function
3Q5	3S4*/3Q4*	Output pentode/Beam pentode
6H6	6AL5/EB91	twin diode
6G6	6AK5/EL91	Output pentode
6SA7	6BE6/EK90	Pentagrid mixer
6SG7	6BA6*/EF93*	RF pentode
6SH7	6AU6/EF94	RF pentode
6SK7	6BD6, 6BA6*/EF93*	RF pentode
6SQ7	6AV6/EBC91	Twin diode + triode
6SR7	6AT6/6BF6/EBC90	Twin diode + triode
6V6	6AQ5*/EL90*	Output beam tetrode
6X5	6X4/EZ90	Rectifier/

*near equivalent



How to make a substitute 6XYZ/M

Book Review - **RADIOS BY** hallicrafters

Timothy Dachis has made a monumental study of the radios that Hallicrafters have produced over the years and is to be congratulated on his presentation of the subject. The book has 221 large pages (28 x 22cms) and contain excellent photographs, many in colour, of the sets the company produced and of relevant subjects including a couple of pages on restoration tips. No circuit diagrams are included. The only criticism is the soft cover binding which, in a book that is often used, can become quite dilapidated with time.

In the preface Timothy describes how he came to be interested in collecting and restoring radios and why he came to concentrate on Hallicrafters in particular. He covers the history of the Company in some detail from the initial start made by Bill Halligan in 1931 through World War II and into the post war boom in HF communications.

Over 600 items produced by Hallicrafters are listed in an index to the book which gives the type numbers, the page on which the item is pictured and described and an approximate idea of the current value of the item if acquired in the USA. There is at least one large clear picture of each of the radio receivers produced together with a description including valve line-up, frequency coverage and power requirements. Hallicrafters transmitters, transceivers, test equipment, military units and television sets receive similar coverage. For the reviewer the range of equipment produced by the Company was an eyeopener.

The NZVRS holds a few copies in stock for members. Contact the Secretary.

IN THE BEGINNING

Alan Roycroft reminisces on his arrival in New Zealand and his early days in radio

At last the sun came up as we finally sailed into the Auckland harbour - was I ever ready. I had mentally rehearsed every bit of the action that would take place before I laid hands on my beloved wooden packing crate and got it somewhere that its contents could be carefully recataloged. First a hurried breakfast , then up on deck at a spot I had planned where there was a clear view of the ship's hold so that a careful eye could be kept on everything that would be lifted out onto the wharf.

Finally, the tarpaulins were whisked off the hold opening then the battens piled aside on the deck. Oh why didn't those stevedores get with the crane? My knowledge of the ways of the waterside workers was about to be brought up to date. "Now take it easy boys, there are no other ships due in today so this one will have to fill our time cards." Dad joined me at my overlook and was amused at my impatience. "My guess is that it will be late afternoon before the Vancouver freight is brought up. Remember all the stuff that was loaded at Honolulu and again at Suva? Well, that has to come out first. Now come along and meet all our friends who have come to the wharf to greet us."

I reluctantly submitted to the kissing and endearment's. When one is fifteen this tribal custom is particularly distressing, but those aunts and uncles could only do it once. Dad suggested that I accompany him to the storage company. STORAGE ? "Oh, yes, remember that we do not have a home here in Auckland yet, and we are staying with Grandma for a few weeks until we find a place." WEEKS! My dreams of unpacking the crate faded into oblivion. Well, at least I would have the pleasure of playing my Philip's QP radio at Grandma's. Dad's performance at the customs office was a bellringer. He had brought in an Aston Martin from England which was parked on the wharf awaiting our return. My brother had a Canadian CCM bicycle, so we had quite a pile to declare as worthless junk. My priceless collection of radio equipment was downplayed so far that no one wanted even to open the crate. All my brother's efforts to scratch the beautiful blue paint on his new bicycle and remove a pedal and bend the seat supports availed him nothing. An obviously new bicycle was a new one in any condition. But boy, did those jerks work over that Aston Martin; they even found the special tools that Dad had hidden under the seats. We were all edgy and tired by the time all the goodies were stowed at the storage shed and we headed for Grandma's.

I took great solace in renewing my love affair with the Philip's QP. I was to bunk down on the lounge floor, so it took many hours to rig up an electrical extension, antenna, and headphones to my make shift bunk. The following few days, Mom and Dad left early to go house searching. On the third day, they invited my brother and me to see the results of their efforts. It was right on a beach. It had only two bedrooms, but plans were being drawn to add a second floor while we occupied the original house. I would be needed to clean up the lot and help the carpenters. Sounded OK to me. It was late spring and the beach sounded most inviting.

We piled out of the Aston Martin at our new home. I led the inspection and suddenly discovered that all the lights were gas. GAS! Not even twelve inches of wire in the whole edifice "But Dad, how can we live in this joint?" "Oh we'll make do until the house rebuild is completed." "But gas! No electricity!"
Nothing I could do, say, or threaten could change the awful truth. I would have to use my crystal set FOREVER!

And that is how it went for six months. Mom saw that I was not my fully effervescent self after the novelty of swimming, yard work, picking up nails and helping the carpenters had worn thin after a few weeks. So, as the 1935-type of mom, she sat me down and suggested that I should regard this enforced radio idleness as a good time to catch up on a lot of theory that I was probably weak on. She hit the target tight on, so she drove me up to the largest technical college in town in her bright red supercharged Austin Seven sports car. Mom would have been into her forties at this time, and no doubt enjoyed the whistles that greeted her every time she went out in her sporty rig with a bandanna tied over her slightly greying hair. The community college said that their radio courses started in May each year, and no way would they accept applications in between, so there. We next visited a commercial college downtown and met their rather grand principal, who I picked as a semi-destitute phoney. "Oh, yes we can start Allan right away in our radio serviceman's course. Payment in advance, please; room 22 at 6 p.m.; three nights a week. Your instructor is fully experienced and licensed as a radio operator by the Post and Telegraph Department."

I arrived at 5:30p.m. on the first evening and found nobody at Room 22 until 6:30. Finally, four students turned up and at 6:45 p.m. our instructor arrived, smelling strongly of that demon liquor. I was not introduced, but was asked if I had any questions. My first was the reason for the late start The other students giggled, and whispered that "The pubs don't close until six." Apparently this tardy arrival of the instructor was accepted by all.

We started in on a harangue by our teacher about how one went about tuning a spark transmitter to a ship's antenna, including the choice of "jars." I raised my voice and asked what this item was, and was derisively informed it was the tuning capacitor unit. At 7:30 we were asked for any questions, so I requested a drawing and explanation of an automatic volume control circuit of a receiver. It was obvious that our instructor probably knew more about the mating habits of gnus.

This ended my career as a pupil.

The next morning Mom and I called on the Principal in his grandiose office and asked for our money back. This was refused in a most blunt manner, so Mom and I decided there and then that we would call in the services of our secret weapon - Dad - who later in the day met with the Principal. He apparently believed Dad's offer to dismantle the establishment if cash (no cheques please) was not immediately forthcoming.

A council of war over the dinner table that night decided that I should go around to used bookshops and buy what I believed would be instructive in the subjects I needed, with my old Stewart-Warner serviceman, Roscoe Turner, helping out with any hard parts. And that was the plan of action. My bible's were The Radio Manual by George E. Sterling, and

Radio Fundamentals by a Professor Terman from Stanford University. I still have The Radio Manual. The secrets of AVC and other more modern developments were supplied by one Hugo Gernsback. My first radio position in March of 1936, and one Albert Yates, the head radio serviceman, kept me on track. More about Albert later.

I discovered at Number 35 on our street a small cottage made from automobile crates - a not unusual source of lumber as new autos shipped to New Zealand had to be crated by order of the insurance companies. The most magical part of Number 35 was a longwire antenna with two zeppelin feeders. I knocked on the front door one evening and asked a kindly Mrs Jones whether there was a ham transmitter living there. "Indeed yes, my son Montague William Sidney Jones. Just one moment please." Very soon there was Monty, stretching out a hand of welcome. I was 15 and Mont was 32. He worked in a city bank, but lived only for the evenings and weekends and his ham transmitter. We were pals for over thirty years until Monty left us with a sudden heart attack. There was no age gap. His sense of humour and youthful interest in radio never changed.

On this first night I was introduced to Mother and Pater of this very English family and also to Mont's two sisters. Pater's principal hobby was playing a one-stringed fiddle, accompanying the permanent classical music program heard on the New Zealand government stations. Mont led me into his bedroom, about seven feet square, which apart from the bed and a small wardrobe, also contained the transmitter and operating table. Some ZLs gained world wide prowess on 40 and 20 meters, the rest operated on 80 meters CW and phone, with most crystal controlled so that each ham was quickly ID'd by his frequency, poor or excellent phone quality, or the XYLs who took over regularly from their husbands.

Mont's ambition was to have the maximum power permitted - 100 watts input - that could be translated by careful design and construction into 80 watts in the antenna, but most importantly, to have broadcast sound quality at 100% modulation. Already we were both on the same wavelength, particularly when I learned that hams on 80 meters could play two sides of a phonograph record each hour. this was not quite as interesting as my broadcast pirating escapades (which horrified Monty no end), or the VK hams in Australia who were permitted to use the top end of the broadcast band between 11p.m. and daylight for continuous musical programs.

Monty was not very up on audio amplifiers. Prior to my first visit he had paid a friend to construct a modulator amplifier with 6L6 output tubes. It turned out to be a dismal failure, with the friend returning Monty's down payment. This was a challenge for me, so with Mont's approval and his transmitter operating, I listened on head phones as Mont made some test calls. All the above about 30% modulation was indeed mush. Using Mont's test meter, I measured the bias volts on the 6L6 cathode bias resistor. Remembering a recent Uncle Hugo article on this same circuit I believed the bias to be low at ten volts and it pulsed badly with Mont's voice I pulled one 6L6 out of its socket as Monty talked, and all modulation ceased. Monty was flabbergasted at this daring do, pulling out tubes with the power on! "Not to worry Mont" as I interchanged the 6L6s to prove that we had one dud. "But these are new tubes," wailed Mont. Looking through the glass envelope, I spied the plate wire coming out of the glass pinch at the bottom of the tube. It had burned up, and was lying inside the glass envelope.

Mont found my diagnosis difficult to accept, so I suggested that we borrow the 6V6 from his receiver for a thirty-second test. "But, but," said Mont, but I had impulsively made the test. With the audio gain control turned down almost to zero, his transmitter modulated as never before. From that evening on, Mont was game for any trick I suggested. It was then I asked Mont every question about transmitters and antennas that were bothering me. In reply, Mont handed over a year's pile of QST magazines. We had started a mutually rewarding association.

A few weeks later I spied a "jobs vacant" advertisement for a radio serviceman trainee at SOS Radio in the downtown city area. Mom made sure that I had a clean shirt on and suggested a tie. Dad helped with my first shave and a lift to town so that I would be first in line. It was a cinch; there were five other applicants who vaguely thought that being a radioman would bring in more money than being a delivery boy.

The radio store apparently shared the premises with a piano dealer. The radio boss employed a brother and his friend to erect outside antennas for other radio dealers. Albert Yates a roly-poly Yorkshireman, was employed as a radio serviceman who repaired mostly warranty jobs on new English radios, known for their tricky circuitry so much that other dealers preferred to send their repairs to SOS. It was Yates who interviewed the job applicants.

Although I was first in line, I was last to be interviewed. I bridled at the thought of such unfairness, which made me more cocky when my turn came. I could not fail to hear the interviews as the dividing wall was a low divider between the shop and the service area. "Is this a triode or a tetrode?" "What is a likely source of hum in a radio receiver?" "What is the very last thing to be done to done to a radio under repair?" And so on. Finally it was my turn, and with a sly grin, Albert asked the questions of me. My replies were, "It is neither, it is a pentode." "Depends upon the hum frequency, most likely open filter capacitors, but it could be a heater to cathode short inside a tube." "Connect the set to an antenna and try all controls to make sure they all work properly." I wondered if Albert also read Uncle Hugo, as these questions were featured in recent Radio Age issues.

Since the preceding applicants had all been dismissed, I assumed that I had the job, but it was not formally announced. There was a list of do's and don'ts, concluding with, "You shall buy a note book and enter everything that I suggest you enter in it." Shades of Jim Bowen at the Lyric Theatre. Apparently Albert Yates was another interested teacher. I was told to appear promptly at eight the next morning with a tool box and no tie. A short smile and I was dismissed. I was never told what the salary would be and I never asked. What better job could one ever wish for?

Over the years Alan Roycroft has provided us with many interesting articles covering both the technical and human side of radio. The above article originally appeared in Radio Age and is reprinted here with Alan's permission. - Ed.

LETTERS TO THE EDITOR

The Editor,

Through you I would like to give a special "thank you" to all members who have given their support to me as Treasurer and General Information Centre for the past ten years. Their letters and odd notes enclosed with subscriptions etc. were very much appreciated.

To the new Executive "the younger generation" with their computers and mod-cons, I wish them all the best.

Bryan Marsh

The Editor:

Your reference on page 23 of the February issue to the Racal model RA-17 receiver had me recollecting a 1971 visit to New Zealand. Somehow, I was directed to a place called Quartz Hill near Wellington. The station had a Racal radio which was used to pick up BBC news broadcasts for relay to the National network. The operator was good enough to let me "twiddle the knobs" to get the feel of the set. Of course, the long film-dial was the most fascinating feature.

It was not until about 1984, while rummaging around in a supply shop that I spotted Five Racal sets. I recognised them right away; and so I brought three of them for $75.00 s piece.

These sets have a few versions; the early ones had tube rectifiers, later replaced with solid state devices. the British version was called type RA.17L *: the North American version RA.17C-12: and another called the RA.117 which used 6AK5's.

These sets were used on Canadian naval ships and the Coast Guard. Many became surplus over time. The Canadian government adopted a policy of removing all capacitors and power transformers after the sets were taken out of service. These components were presumed to contain PCB's. How radios which had been in service for thirty years suddenly became a hazard when taken out of service is, to be polite, open to question. They were generally smashed up and sold to junk dealers for five cents a pound for the value of the heavy aluminium chassis sections. I located 18 of these sets in a junk yard. To a radio man, it was not a pretty sight. However I was able to gather a pile of remnants for spare parts, which the junkie was delighted to sell me for 50 cents a pound.

Alignment of these radios is a challenge if you've got a day to spare and a reasonable calm temperament.

I subsequently obtained the low frequency converter type RA 37 but there is little to hear except radio and marine beacons, some direction finders around 60 and 10 kHz. and lots of RTT between 20 and 200 kHz.

There is also a SSB unit but it does not appear necessary. I can get entirely adequate reception of SSB using the BFO and the calibrated BFO control.

Jack Rhodes. (VE7XJ ex ZL1BMS)
Victoria, B.C.

*Bryan Marsh tells me that the L version preselector worked below 1 MHz while other versions of the RA 17 were wideband. - Ed.

The Editor,

Recently I was browsing through a waiting room magazine (English) devoted to antiques when I came to a centrefold which illustrated and described various collectables. One item which caught my eye was a *Fellophone,* a typical 1923 receiver in a small mahogany case and with a sloping ebonite panel with two calibrated knobs spoilt by a pair of rather modern looking valves. On the panel was the usual BBC licensing logo.

The accompanying description was a revelation.

I learnt that it was built in 1923 by the BBC, is worth eight hundred pounds (about $1850) and that the valves were mounted on the panel because they became too hot to be inside the cabinet!!!

You learn something every day. Seriously though this confirms that the Antique Trade may not be a very good source of either radios or information.

Peter Lankshear

The Editor,

Further to your "From the Editor" column of last issue re wartime developments by NZ Govt. departments I have the following from DSIR activities during the war.

1. Radio Development Branch DSIR, NZ. "Multi Test Meter Type 1" circuit and operating instructions - undated.
2. Radio Development Laboratory DSIR, NZ. "Resistance Capacity Bridge R.D.2 Type 2" description, operating instructions and circuit dated 23rd June 1944 by A W Melville.
3. Radio Development Laboratory DSIR NZ. "Cathode Ray Oscilloscope R.D.L. 5 inch type 1" description, instructions and circuit dated 24-11-42.

I do not know if any of this equipment was ever available. I found the data in the library of the Power Board where I was employed and was able to save it from the waste paper collection. Perhaps some of our members may be able to help with more info. If any member would like photocopies they are welcome to contact me.

Doug Fairbanks,
5 Richardson Ave., Gisborne.

The Editor,

I joined the Society about a year ago. I've been collecting for about 5 years now. Restoring for 3 years. Boy oh boy why didn't I start sooner. My collection to date is growing at a healthy rate. My wife and family have become quite attached to the ol' girls.

To date we have been through the "kick the car out of the shed stage. The kick the family out of the lounge" stage is not far too far off. So the "purpose built shack" stage is well under way. If anybody had told me 5 years ago that I would strike this space dilemma I'd have laughed at them.

So far my restorations have been the easily sourced sets of the forties and fifties. The likes of Ultimate, Columbus, etc. I tend to stick to the rule of "no diagram, no fix", you see electronics is still a bit of a mouthful for me. So the diagram is important to me to take the guess work out of the circuit thus almost guaranteeing me eventual success.

My present search is a desperate one. I've exhausted the local contacts. The "Conroy cabinet" Columbus is a nostalgic dream while the "Stromberg-Carlson" is a complete and expensive exercise. If I ever succeed in restoring it , it will be an overspend made easy to swallow. So please find enclosed my "wanted" ads.

Athol Kemp, Hawera.

I, together with many readers, will sympathise with you over your space problems, Athol. - Ed.

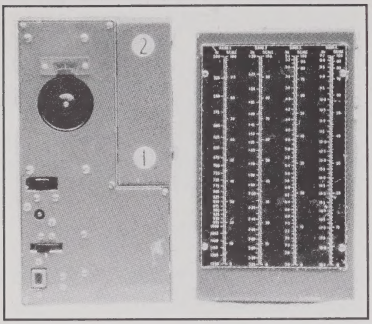
A WIND-UP TAPE RECORDER.

by Ted Warbrooke

About the year 1959 I decided to build for myself a small battery powered tape recorder. The modern marvels of the time, Transistors, would be used in the tape recorder's amplifier instead of valves. However, the drive motor I first considered using proved to be hungry for electric current and its speed varied widely, just great for a wobbly signal so the whole plan was shelved for a while.

My budget was tight so this problem demanded a cheap effective solution; what about that old wind-up Gram motor beneath the house.

Maybee .....By 1962 a rather larger recorder than was first planned was performing well, however a frequent stir up was in order to keep the tape moving.



HELP WANTED Can anyone help with information on the above set? It is a WWII vintage, made in UK, and is a 4 band (500kHz - 8 Mhz) communication receiver using 1R5 + four hearing aid valves. John R L Walker, ZL3IB, Athol Tce., Christchurch. Ph. 03-3489084, fax 03-3489480. Email; Walker@BOTN.Canterbury.ac.nz.

SUBSCRIPTIONS

Those members who have a red dot on their bulletin label are reminded that their 1997/8 subscription has not been received. Bulletin posting will cease with this issue unless subs are paid by 31 July 1977.

A financial statement for the year ending 31st March 1997 is enclosed with this bulletin

NEW MEMBERS

S A Catterall	Nelson
L Wai Kei	Hongkong
E Herbert	Waihi Beach
I Maich	Auckland
G W Gee	Auckland

FROM THE LIBRARY

The following are extracts of articles from vintage radio magazines received by the NZVRS library. Photocopies of these articles are available at $1 each plus postage from the librarian - Ernie Hakanson, 17 Williamson Ave, Grey Lynn, Auckland. Phone 09/3766059

21 The 3BZ Coast Watchers Wireless Set. Photos with descriptions. HRSA Radio Waves No 55, p3.

22 The Palmavox 3/4 Mantel Radio of 1934. Description, photo and circuit. HRSA Radio Waves No 55, p11

23 Focus on Philips: 50 Years in Australia. History. Brief history. HRSA Radio Waves No 55, p11.

24 The Kiwi Connection - The Columbus 25E. restoration details with photos and circuit. HRSA Radio Waves No 55, p19

25 Thoughts on Valve Testing. describes principles of various testers. HRSA Radio Waves No 55, p21.

26 The Soviet SCR-211 Frequency Meter. description, photos and circuit. HRSA Radio Waves No 55, p5

27 The Fisk Radiolettes: models 33, 35, 36, 38, 39. descriptions with photos and circuit diagrams. HRSA Radio Waves No 55, p16.

28 American VT valves and their commercial equivalents. HRSA Radio Waves No 55, p24.

29 Who Did Invent the Superhet? history of invention. HRSA Radio Waves No 55, p25.

WANTED (continued)

1) Sm plastic cabinet for "Mullardette" - circular dial on RHS, 2 controls, brandname in oval recess top centre of front, prefer white or red but brown OK. Will buy whole radio if necessary. 2) Philco model 203A. Sm. plastic radio, louvred over speaker grille, 2 controls top of cabinet facing upward (G.A.R. p. 48), pref. but not essential without cracks. 3) Dial glass (thick, bevelled corners) for Philips model 461 - D.W. Model 465 glass OK (G.A.R. p. 60) 4) Chassis & integral speaker for Skyscraper model 5BB (1933) or model 5NN, twin peephole mantel, 5V, 2A5, 2A6, 2A7, 58 etc. 2 controls at front and 1 on L.H. end. Similar to Mission Bell - G.A.R. p. 100. 5) Chassis only for 1931 Clarion Model AC80. Arc (full vision) dial, 3 controls (triangular configuration), any condition. 6) 3 brown knobs for AWA Radiolette. Dual wave model 38 (G.A.R. p.152). 7) Bakelite cabinet only for Mullard model 50 (Airzone model 550), upright, 3 controls, rectangular dial at bottom. Pref. brown but white OK, no cracks, white panel insert not essential. (G.A.R. p. 148). 8) Ekco SW86. Pref black but brown OK and Philips model 2510 with or w/out speaker, not necessarily operative but in reasonable condition.
9) Mullard model $X30^{A}$ or X44. Top right in advert G.A.R. p.59.
Mark R Thompson, 7 Danbury Dr., Torbay, Auckland 1310. Ph. or fax 09/4738388 after hours.

Columbus model 75 or 90 in floor console "Conroy" cabinet (M.G.A.R. p118), prefer complete radio in good condition but anything seriously considered, even parts for. Will meet your price. Also diagrams, info. and parts for 1932 Stromberg-Carlson model 532 (M.G.A.R. p75).
Athol Kemp, 344 South Rd. Hawera, Taranaki. Ph. 06/2788619 or 025/537619

Columbus 18, horizontal mantel radio, aero dial (See p116 top centre M.G.A, captions are transposed, correct type number is in the original ad picture). Airzone 615 round glass dial scale (6.5" dia.) or chassis with good dial.
Ian Sangster 75 Anawhata Road Piha New Lynn 1250. Ph.09-8149597.

Manual and/or circuit of Advance E2 Signal Generator. Quartz crystal unit, 462 kHz, for National HRO Rx. (IF filter). Manual for Bendix radio BC221M frequency meter (must be for M version). Wrench (knob set screws) as usually supplied with BC221M (Bristo No.6).
Phil McGechie, 2/10 Elizabeth St., Orewa. Ph. 09/4266661.

Still searching for old microphones (ribbon / RCA's / etc) and broadcast equipment (mic. preamps / equalisers / compressors).
Clarry Schollum, 34 Pentland Ave., Mt Eden, Auckland. Ph. 09/6307011.

Circuit, operating instructions and any service data for "Sonophone Sound Systems" type 145R serial 0028 School Radio and Intercom System (4 class unit).
Doug Fairbanks, 5 Richardson Ave, Gisborne. Ph. 06/8671592.

Majestic valves (ie. grey shielding) types 2A5-s, 2A7-s, G55-s, etc (any numbers at all). Following chassis: Majestic model 130, 130A + speaker, Majestic model 463 complete (shown in G.A.R. p107, as 461), RCA R28P, Majestic 50,51,52 (p165 M.G.A.). Radios; Atwater Kent 447, RCA 100,110,121 + any part for these sets. Speaker for Zenith 6S-256 etc. (going or not). Wooden knobs; RCA petal design (eg. RCA R28P), Zenith -any size or shape & Atwater Kent & Majestic. Will pay any costs for post etc.
Bob Cook, Unit 3/475 Blockhouse Bay Rd., Auckland. Ph 09/6266241.

MARKETPLACE

Advertisements for the next issue must reach the editor by the 15th July 1997. Ads should be either hand printed or typed on a separate page. Note: no verbal or phone ads will be accepted. Remember to include your name, address and phone number. There is no charge for ads but the NZVRS is not responsible for transactions between members. Address ads to:
Reg Motion, 2A Hazel Terrace, Tauranga, New Zealand.

AVAILABLE

Valve collectors; I have for disposal the following "special-type" valves, all "as is", ex laboratory instruments; GR10A (x2), GC10/4B, E1T, Z504S* (counter tubes), 6816/YL1101* (UHF Tx.), IP28 (photomultiplier), 2D21 (x4), 12E1 (x2), 85A2 (x4), 6060 (=12AT7) (x20), E92CC (x30), E83F (x20). *=new, boxed. Offers to John R L Walker, ZL3IB, 19 Athol Tce, Christchurch 4. Ph. 03/3489084, Fax 03/3489480,
Email Walker@BOTN.Canterbury.ac.nz.

1 copy GHIRADI'S "Modern Radio Servicing" 1st edition 1935. Offers to:
Doug Fairbank, 5 Richardson Ave., Gisborne. Ph. 06/8671592.

Surplus radios and chassis available, mainly late 30's & 40's, good prices, will send photos. Also valve cartons, unprinted; small and GT 10c each, medium 12c each, large 18c each, all prices plus postage.
Paul Burt, 44 Hastings St. West, Christchurch 8002. Ph. 03/3327157.

Large quantity of output transformers for radios, new in boxes, several wattages and impedances. Phone your wants.
Clarry Schollum, 34 Pentland Ave, Mt Eden, Auckland. Ph. 09/6307011.

Emerson AR171 see p.159 M.G.A., Philips 563, Mullard 620 p.115 M.G.A., NZ Gulbransen wooden horizontal table radio with slide rule dial, Philips prewar bakelite radio with 3 sub chassis, Neeco Bandmaster with moulded maroon perspex cabinet see p.140 *M.G.A*, Courtenay 15 table radio, two Ultimate RCP Cygnets in white, Courtenay 27 see p.122 M.G.A., Ultimate RAX wood table radio see p.73 G.A.R., Columbus 52S wooden table radio, Bell two speaker General with broken cabinet, Mullard 957 with good dial, Philips 461 brown no dial, Mullard 648 cabinet cracked, Philips BZ357A cabinet cracked, Mullard 522 brown no cracks, Murphy Magna d.w. brown, AVO mk3 valve tester with book, Telequipment service scope, Dick Smith Q1280 scope, large wooden cased Evershed and Vignoles voltmeter and assorted boxed pre-octal, octal and miniature valves.
All items from the estate of Keith Jackson NZVRS member; contact Alan Jackson 368A Yaldhurst Road Christcurch. Ph. 03-3425514.

Shed bursting sale. My shed, large as it is, is bulging with radios. I love them all, but something has to go. Visit and help me out, bring money. Australian Official Radio Service Manual vols 2 and 3 prefer to trade for vols 5, 6, 7 or 8.
Ian Sangster 75 Anawhata Rd. Piha New Lynn 1250. Ph. 09-8149597.

Set of 3 bound volumes of Harmsworth's Wireless Encyclopedia. Good order. $45. John Stokes. 281C Hillsborough Rd., Mt. Roskill, Auckland. Ph 09/6256615.

WANTED

Loan/purchase of copy of "Radio Frequency Measurements" (1926) by Moullin.
Reg Motion, 2A Hazel Terrace, Tauranga. Ph. 07/5768733